

REMARKS

Reconsideration of the application is respectfully requested in view of the above amendments and the following remarks. Claims 1, 8-10 and 14 have been amended. The amendments to the claims have been made to address formality issues, as described in further detail below. Claims 17-22 are withdrawn. No new matter has been added.

§112 Rejections

Claims 8-10 and 12-16 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The claims have been amended to replace the term "thermostat device" with "heater" as suggested by the Examiner, and are now definite.

Claims 10 and 14-16 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The term "thermostat device" has been replaced with the term "heater" throughout the claims and specification of the present application.

Claims 1-5, 8-10 and 12-16 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite related to the limitation "a first three-way valve located between said liquid source, said purging gas provider and said liquid injector, wherein said first three-way valve isolates said liquid source, said purging gas provider, and said liquid injector from a process gas". Applicants have amended claims 1, 8 and 14 to no longer require that the first three-way valve isolates the liquid source, purging gas provider, and liquid injector from a process gas.

Withdrawal of the §112 rejections is respectfully requested.

§102(e)/§103(a) Rejections

Claims 1-4 were rejected under 35 U.S.C. §102(e) or, in the alternative, under 35 U.S.C. §103(a) as being obvious over, Sun (U.S. 6,409,839). Applicants respectfully traverse this rejection.

Sun discloses a vapor generator and connected chemical vapor deposition chamber for providing a vapor for operations such as chemical vapor deposition. Sun discloses with

reference to Figure 7 an orifice or nozzle 54 that receives compressed gas from the source 12. The compressed gas goes through the nozzle 54 and forms a jet of air in the passageway 55 where the jet of air combines with liquid provided through the passageway 56 from the liquid source 14. This arrangement provides for a liquid supplied to a jet of air downstream of the nozzle 54. A valve 70 controls flow of solvent 72 and liquid 14, but does not control flow to nozzle 54. Therefore, Sun fails to disclose or suggest "a first three-way valve located between said liquid source, said purging gas provider, and said liquid injector to control flow between said liquid source, said purging gas provider, and said liquid injector," as required by claim 1.

Furthermore, the nozzle 54 disclosed by Sun is an air nozzle that forms a jet of air rather than a liquid injector that atomizes liquid from a liquid source and injects the atomized liquid. Thus, Sun fails to disclose or suggest "a liquid injector configured to atomize liquid from a liquid source and inject the atomized liquid," as required by claim 1.

§103(a) Rejection

Claim 5 was rejected under 35 U.S.C. §103(a) as being obvious over Sun in view of Lei (U.S. 2003/0049933) and Yamamuka (U.S. 6,110,283). Applicants respectfully traverse this rejection. As discussed above, Sun fails to disclose or suggest every limitation of claim 1. Lei and Yamamuka fail to remedy the deficiencies of Sun as it relates to claim 1. Therefore, Sun, Lei and Yamamuka, alone or in combination, fail to disclose or suggest every limitation of claim 5 for at least the reason it is dependent upon an allowable base claim. Applicants do not otherwise concede the correctness of this rejection.

Claims 1-5, 8, 9 and 12-13 are rejected as being obvious over Noguchi (JP 2001-250819) in view of Lei and further in view of Sun and/or Sturm (U.S. 6,178,925), and further in view of Yamamuka. Applicants respectfully traverse this rejection.

Noguchi, Lei, Sun, Sturm and Yamamuka all fail to disclose or suggest "a first three-way valve located between said liquid source, said purging gas provider, and said liquid injector to control flow between said liquid source, said purging gas provider, and said liquid injector," as

required by claims 1 and 8. Noguchi does not disclose a three way valve. Yamamuka discloses a three way valve connected with a vaporizer and exhausting branch (vent line). Lei discloses that the three way valve allows gaseous TDMAT to flow from a gas panel outlet port to CVD chamber for deposition upon a wafer. Sun and Sturm disclose three way valves, but not a three way valve that controls flow to a liquid injector. Therefore, none of these references, alone or in combination with each other disclose or suggest a single three way valve positioned that is between a liquid source, a purging gas provider, and a liquid injector and that controls flow between those three features as does the first one way valve of claims 1 and 8. Therefore, Noguchi, Lei, Sun, Sturm and Yamamuka fail to disclose or suggest every limitation of claim 1 and 8 and the claims that depend from them.

Claims 10 and 14-16 are rejected as being obvious over Noguchi in view of Lei, Sun and/or Sturm and Yamamuka, and further in view of Ewing (U.S. 5,553,188). Applicants respectfully traverse this rejection.

Noguchi, Lei, Sun, Sturm, and Yamamuka fail to disclose or suggest three-way valves arrangements as set forth in claims 8 and 14 for at least those reasons discussed above. Ewing discloses the use of a heater in the form of a coil to heat a vaporizer. However, Ewing fails to remedy the deficiencies of Noguchi, Lei, Sun, Sturm, and Yamamuka as they relate to three-way valve arrangements. Furthermore, Noguchi, Lei, Sun, Sturm, Yamamuka and Ewing fail to disclose or suggest "a liquid injector configured to atomize and inject a liquid from a source of liquid," as required by claims 8 (from which claim 10 depends) and 14. Therefore, claims 10 and 14-16 are not obvious in view of the cited references

Claims 8-10 and 12-16 are rejected as being obvious over Noguchi in view of Lei, Sun and/or Sturm, Yamamuka, and further in view of Nagashima (U.S. 5,419,924), Chen (U.S. 6,267,820) and Kanishak (U.S. 6,086,711). Applicants respectfully traverse this rejection.

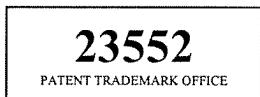
According to previously analysis, the combination of Noguchi, Lei, Sun, Sturm, and Yamamuka fails to disclose or suggest every limitation of claims 8 and 14, including "a liquid injector configured to atomize liquid from the liquid source and inject the atomized liquid; . . . a first three-way valve located between said liquid source, said purging gas provider, and said liquid injector to control flow between said liquid source, said purging gas provider, and said

liquid injector." Noguchi, Lei, Sun, Sturm, and Yamamuka also fail to disclose or suggest the specific arrangement of the second three-way valve required by claims 13 and 14. Nagashima, Chen and Kanishak fail to remedy the deficiencies of Noguchi, Lei, Sun, Sturm, and Yamamuka. Therefore, claims 8 and 14, and the claims that depend from them are not disclosed or suggested by Noguchi, Lei, Sun, Sturm, Yamamuka, Nagashima, Chen and Kanishak.

Conclusion

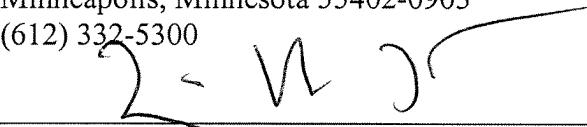
In view of the above, Applicants respectfully request reconsideration of the application in the form of a Notice of Allowance. If a phone conference would be helpful in resolving any issues related to this matter, please contact Applicants' attorney, Brian H. Batzli at 612.336.4755

Respectfully submitted,



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